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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/684,936

10/14/2003

Shunpei Yamazaki

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7755

7590

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EXAMINER

TRAN, THIEN F

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/684,936

Applicant(s)

YAMAZAKI ET AL.

Examiner

Thien F. Tran

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 64-90 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1 and 64-90 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 81-85 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recitation of an electrode through the first silicon nitride oxide film and the second silicon nitride oxide film sets forth a structure not supported by the disclosure. In fact, figure 1A shows electrodes 106, 107 for applying a voltage to the semiconductor island 103 through the third silicon nitride oxide film 104a. There is no electrode going through the first silicon nitride oxide film 102a and the second silicon nitride oxide film 102b as recited in claim 81. Applicant is requested to point out exactly wherein the application that provides the support for the recitation of an electrode for applying a voltage to the semiconductor island through the first silicon nitride oxide film and the second silicon nitride oxide film.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

Art Unit: 2811

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 64-69 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 6,380,558. Although the conflicting claims are not identical, they are not patentably distinct from each other because Yamazaki '558 claims many of the same features outlined in the claims of the pending application except expressly reciting the semiconductor island being crystalline silicon. However, it is a well known practice in the semiconductor art to use crystalline silicon as a material for the semiconductor island to provide higher currents and higher mobilities. Therefore, forming the semiconductor island comprising a conventional material of crystalline silicon would have been obvious modification.

Regarding claim 64, claim 1 of '558 discloses the first concentration is higher than a concentration of oxygen in the first silicon nitride oxide film.

Regarding claim 65, claim 1 of '558 discloses the second concentration is lower than a concentration of oxygen in the second silicon nitride oxide film.

Regarding claim 66, claim 3 of '558 discloses the first concentration is not less than 25 atomic % and less than 50 atomic %, and the third concentration is not less than 5 atomic % and less than 25 atomic %.

Regarding claim 67, claim 2 of '558 discloses the semiconductor island having a tensile stress, the first silicon nitride oxide film having a tensile stress, and the third silicon nitride oxide film having a compressive stress.

Regarding claim 68, claim 4 of '558 discloses the semiconductor device being one selected from the group consisting of a liquid crystal display device, an EL display device, and an image sensor.

Regarding claim 69, claim 5 of '558 discloses the electronic equipment being selected from the group consisting of a portable telephone, a video camera, a portable information terminal, a head mount display, a projector, an electronic portable book, a personal computer, a DVD player, and a digital camera.

Claims 70-80 and 86-90 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 31-35 of U.S. Patent No. 6,380,558. Although the conflicting claims are not identical, they are not patentably distinct from each other because Yamazaki '558 claims many of the same features outlined in the claims of the pending application except expressly reciting the crystalline semiconductor island being silicon. However, it is a well known practice in the semiconductor art to use crystalline silicon as a material for the crystalline semiconductor island to provide higher currents and higher mobilities. Therefore, forming the crystalline semiconductor island comprising a conventional material of crystalline silicon would have been obvious modification.

Regarding claims 71, 77 and 87, claim 34 of '558 discloses the first concentration is not less than 25 atomic % and less than 50 atomic %, and the third concentration is not less than 5 atomic % and less than 25 atomic %.

Regarding claim 72, the crystalline semiconductor island inherently has a tensile stress.

Regarding claims 73, 79 and 89, claim 32 of '558 discloses the semiconductor device being one selected from the group consisting of a liquid crystal display device, an EL display device, and an image sensor.

Regarding claims 74, 80 and 90, claim 33 of '558 discloses the electronic equipment being selected from the group consisting of a portable telephone, a video camera, a portable information terminal, a head mount display, a projector, an electronic portable book, a personal computer, a DVD player, and a digital camera.

Regarding claim 76, claim 35 of '558 discloses all the features recited in claim 76.

Regarding claims 78 and 88, claim 31 of '558 does not recite the gate electrode being formed of Ta, Ti, Mo or W. However, Ta, Ti, Mo or W are metal materials known in the semiconductor art to form a gate electrode to provide improved conductivity. Therefore, forming the gate electrode of the materials recited in claim 78 would have been obvious modification.

Regarding claim 86, '558 does not specifically disclose an electrode for applying a voltage to the semiconductor island through the third silicon nitride oxide. It would

have obvious to form a conventional electrode through the third silicon nitride oxide film to apply a voltage to the semiconductor island in order for the device to function.

Response to Arguments

Applicant's arguments with respect to claims 1, 64-90 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien F. Tran whose telephone number is (571) 272-1665. The examiner can normally be reached on 8:30AM - 5:00PM Monday through Friday.

Art Unit: 2811

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tt
April 01, 2005


THIENTRAN
PRIMARY EXAMINER